

--This application is a division of U.S. application Serial No. 08/905,654, filed on August 4, 1997, which is a division of U.S. application Serial No. 08/479,339, filed on June 7, 1995, which is a continuation-in-part of U.S. application Serial No. 08/082,689, filed on June 25, 1993. The respective disclosures of each of these patent applications is incorporated herein by reference.--

In the Claims:

Please cancel claims 10 to 14 and add claims 15 to 45, as indicated below:

15. A process comprising the steps of:

- providing a photosensitive element comprising:

a backing layer;

at least one layer of photopolymerizable material on said backing layer;

at least one ablation layer which is ablatable by infrared radiation and opaque to non-infrared actinic radiation, wherein the infrared ablation layer is in direct contact with the at least one photopolymerizable layer and has a surface opposite the photopolymerizable layer capable of being exposed to laser ablation, the infrared ablation layer comprising:

at least one infrared absorbing material;

at least one binder that is a polyacetal, polyacrylic, polyamide, polyimide, polybutylene, polycarbonate, polyester, polyethylene, cellulosic polymer, polyphenylene ether, or polyethylene oxide;

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Cmold*

wherein the infrared ablation layer is ablatable from the surface of the photopolymerizable layer upon exposure to infrared laser radiation; and

• ablating said ablation layer using a laser, thereby providing ablated and unablated areas forming an image.

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Cont*

16. The process of ~~claim 15~~ further comprising flood exposing said ablated element to UV light without a negative, thereby curing said photopolymerizable layer in areas under ablated areas of said ablation layer.

*Sub
Fig*

17. The process of ~~claim 16~~ further comprising developing said exposed element.

18. The process of claim 15 wherein said backing layer is transparent.

19. The process of claim 15 wherein said photopolymerizable layer includes a polyurethane, acrylonitrile rubber, or a diblock or triblock copolymer made from styrene-isoprene or styrene-butadiene.

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D3*

20. The process of ~~claim 19~~ wherein said photopolymerizable layer includes an acid-modified acrylate polyurethane or an amine-modified acrylate polyurethane.

21. The process of claim 15 wherein said infrared absorbing material absorbs infrared radiation having a wavelength of 10.6 μm .

22. The process of claim 15 wherein the at least one binder is a polyamide.

23. The process of claim 15 wherein the at least one binder is a cellulosic polymer.

24. The process of claim 23 wherein the at least one binder is hydroxypropylcellulose.

25. The process of claim 15 wherein the infrared absorbing material is non-migratory.

26. The process of claim 15 wherein the infrared absorbing material constitutes about 1-20 weight parts per hundred of said ablation layer.

27. The process of claim 15 wherein said laser emits light having a wavelength of 10.6 μm .

28. The process of claim 15 wherein said laser emits light having a wavelength of 300-400 nm.

29. The process of claim 16 wherein said exposing step is conducted under application of vacuum.

30. A process comprising the steps of:

- providing a solid, photopolymerizable printing plate comprising:

a backing;

at least one layer of photopolymerizable material on said backing, said photopolymerizable layer comprising a photopolymer which is unaffected by radiation at a selected wavelength in the range of 300-400 nm and an initiator activatable at the selected wavelength; and;

a radiation absorbing layer over said photopolymerizable layer, said absorbing layer comprising a polymeric matrix that is transparent to ultraviolet radiation and a dopant having a high extinction coefficient in the wavelength range of 300-400 nm, wherein said radiation absorbing layer is capable of being photoablated by a laser operating at a first energy level in the wavelength range of 300-400 nm, and wherein unablated areas of said absorbing layer are capable of absorbing at least 95% of irradiated light in the wavelength range of 300-400 nm from an ultra-violet light source operating at a second energy level lower than said first energy level; and

- ablating said absorbing layer using a laser, thereby providing ablated and unablated areas forming an image.

31. The process of claim 30 further comprising flood exposing said ablated element to UV light without a negative, thereby curing the photopolymerizable layer in areas under ablated areas of said absorbing layer.

32. The process of claim 31 further comprising developing said exposed element.

33. The process of claim 30 wherein said backing layer is transparent.

34. The process of claim 30 wherein said photopolymerizable layer includes a polyurethane, acrylonitrile rubber, or a diblock or triblock copolymer made from styrene-isoprene or styrene-butadiene.

35. The process of claim 34 wherein said photopolymerizable layer includes an acid-modified acrylate polyurethane or an amine-modified acrylate polyurethane.

36. The process of claim 30 wherein said polymeric matrix includes a polyacetal, polyacrylic, polyamide, polyimide, polybutylene, polycarbonate, polyester, polyethylene, cellulosic polymer, polyphenylene ether, or polyethylene oxide; the at least one binder is a polyamide.

37. The process of claim 36 wherein said polymeric matrix includes a polyamide.

38. The process of claim 36 wherein said polymeric matrix includes a cellulosic polymer.

39. The process of claim 38 wherein the polymeric matrix includes

hydroxypropylcellulose.

40. The process of claim 30 wherein said dopant absorbs radiation having a wavelength of 10.6 μm .

41. The process of claim 30 wherein said dopant is non-migratory.

42. The process of claim 30 wherein said dopant constitutes about 1-20 weight parts per hundred of said radiation absorbing layer.

43. The process of claim 30 wherein said exposing step is conducted under application of vacuum.

44. The process of claim 30 wherein said laser emits light having a wavelength of 10.6 μm .

45. The process of claim 30 wherein said laser emits light having a wavelength of 300-400 nm.